

## REMARKS

Claims 1-12 were pending.

Claims 1-12 were rejected.

Claim 5 is amended.

Claims 13-19 are new.

Calims 1-19 are now pending.

Claim 5 is amended to add the word "which". This improves the grammar of the claim.

Claim 13 is a new claim dependent upon claim 5. The new claim requires that the polymeric residues be removed from the alkenyl succinic anhydride. This new claim is supported by the Table 1 on page 7 of the disclosure. In particular, Nos 5 and 6 show distilled alkenyl succinic anhydride having less than 1 % polymeric residues. Thus the distilled product has the polymeric residues removed.

New claim 14 and 16 are supported by the Table on page 7 of the disclosure which compares the Gardner color of the distilled (examples 5 and 6) ASA to undistilled examples (1-4). The distilled ASA contains polymeric residues under 1%. The color of these distillates is lower than that of the undistilled with polymeric residues above 1 %.

Claims 14 and 16 are further supported by the disclosure on page 5, second paragraph which states "ASA distillates have better colour than "conventional" ASA and may for example have a Gardner colour of about 2 as compared with the value of 4-11 for the undistilled product.

Claim 15 is supported by Table 2 on page 9 and the third and forth lines after Table 2 on page 9 of the specification, wherein the distilled product (lower polymeric residues) has a lower rate of hydrolysis when compared to its non-distilled (higher polymeric residues) counterpart. As evident from Table 1 on page 7, the distilled product has a lower polymeric residue content.

New claims 17-19 are supported by the third paragraph on page 5 of the disclosure.

No new matter has been added.

### **35 USC 103(a)**

**Claims 1-12 are rejected under 35 USC 103(a) as being unpatentable over Tansley et al. in view of Fakoukakis et al., US 4,956,478.**

In the Advisory Action mailed on January 12, 2007, the Examiner states "that the Applicant enumerate the unobvious advantages on p12 under Summary and Conclusions, the lower rate of hydrolysis and better color of the alkenyl succinic anhydride product. The limitations of the specification are not read into the claims."

The Applicant respectfully believes these advantages (low hydrolysis and low color) to naturally flow from the use of a sizing containing ASA **incorporating a maximum of 1 % by weight of polymeric residues**. Thus there is no need to incorporate a color or hydrolysis limitation into the claim because the reason for the low color and low hydrolysis is a maximum of 1 % by weight of polymeric residues, already a limitation of the claims.

To illustrate this point, both examples 5 and 6 on page 5 in Table 1, have low polymeric residues. Example 5, has moderate olefinic content and example 6 shows very low olefinic content. It is clear that the color advantage of the ASA derives from the fact that both distilled ASA products contain a maximum of 1 % polymeric residues.

### **New Claim 13**

Claim 13 is dependent on claim 5 and requires that the polymeric residues be removed from the ASA. Fakoukakis states in column 2, lines 17-18 that "substantially no polymeric residue was any longer contaminating the desired alkenyl-succinic anhydrides and, as a consequence, the latter can be used in many instances without further purification by distillation."

Thus new claim 13 is unobvious over Tansley in view of Fakoukakis because Fakoukakis teaches that there are substantially no polymeric residues so there would be no reason to remove them.

### **New Claims 14, 15 and 16**

Although the Applicants respectfully believe the Examiner to be incorrect in his statement that the Applicant arguments are directed to unclaimed features of the invention, the Applicant has added

three new claims 14, 15 and 16 which contain the specific features discussed in order to further prosecution.

The paper sizing composition comprising aqueous emulsions of alkenyl succinic anhydride incorporating a maximum of 1 % polymeric residues contain improved characteristics over those of the prior art. More specifically, the alkenyl succinic anhydride of the present invention shows a lower rate of hydrolysis for the aqueous emulsions of alkenyl succinic anhydride and significantly lower color for distilled alkenyl succinic anhydride. See page 13 of the present specification.

Furthermore, the improved characteristics of the paper sizing composition are especially unexpected in light of Tansley in view of Fakoukakis. Tansley is primarily concerned with ketene dimer and makes only a passing mention of alkenyl succinic anhydride. Fakoukakis does not even mention paper sizing as a potential use for alkenyl succinic anhydride. Thus the advantages are especially surprising in light of the fact that Fakoukakis does not even suggest a use in paper.


Therefore, the Applicant assert that the paper sizing composition comprising aqueous emulsions of alkenyl succinic anhydride incorporating a maximum of 1 % polymeric residues contain improved characteristics (low color and hydrolysis rate) and that these characteristics would have been unexpected in light of the teachings of Tansley in view of Fakoukakis. Applicant respectfully request reconsideration and withdrawal of this rejection.

Reconsideration and withdrawal of the rejection of claims 1-19 is respectfully solicited in light of the remarks and amendments *supra*.

Since there are no other grounds of objection or rejection, passage of this application to issue with claims 1-19 is earnestly solicited.

Applicants submit that the present application is in condition for allowance. In the event that minor amendments will further prosecution, Applicants request that the examiner contact the undersigned representative.

Respectfully submitted,



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Enclosures: Request for Continued Examination and 1 month petition for extension of time.